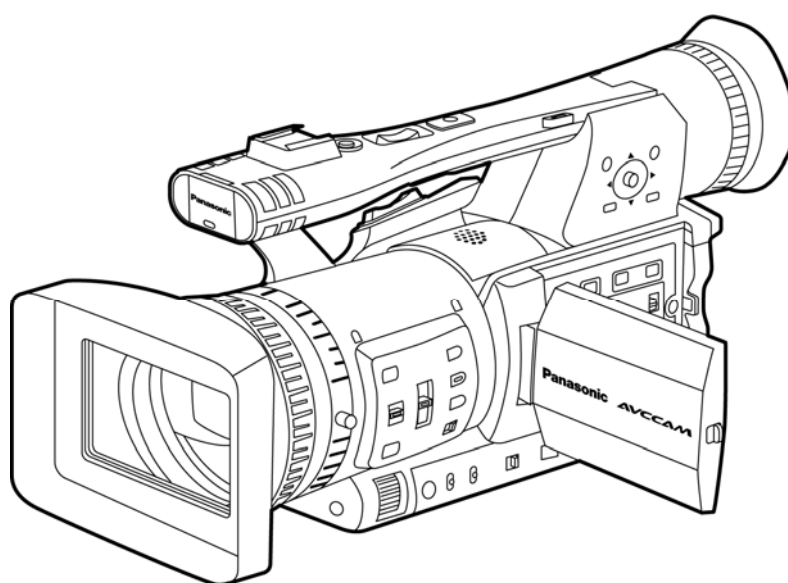


# Service Manual

- Sec. 1** *Service Information*
- Sec. 2** *Disassembly Procedures*
- Sec. 3** *Electrical Adjustment*
- Sec. 4** *Block Diagrams*
- Sec. 5** *Schematic Diagrams*
- Sec. 6** *Circuit Board Diagrams*
- Sec. 7** *Exploded Views &  
Replacement Parts List*

Memory Card Camera-Recorder  
Model No. **AG-HMC150P/AN**  
**AG-HMC151E**  
**AG-HMC152EN**  
**AG-HMC153MC**  
**AG-HMC154ER**

**AVCCAM**



**AVCHD**



**HDMI**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

**LEICA**  
**DICOMAR**



**Panasonic®**

© 2008 Matsushita Electric Industrial Co., Ltd. All rights reserved.  
Unauthorized copying and distribution is a violation of law.

## WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

## AG-HMC150P Specifications

### [General]


**Supply voltage:** DC 7.2 V

(when the battery is used)/

7.3 V

(when the AC adapter is used)

**Power consumption:** Recording: 9.8 W

 indicates safety information.

### Ambient operating temperature

0 °C to 40 °C (32 °F to 104 °F)

### Ambient operating humidity

10% to 80% (no condensation)

### Weight

Approx. 1.7 kg (3.7 lb)

(excluding battery and accessories)

### Dimensions (W x H x D)

154 mm x 164 mm x 397 mm

(6-1/16 inches x 6-15/32 inches x 15-5/8 inches)

(excluding the projection part)

### [Camera]

#### Pickup devices

CCD image sensor (x 3)

(1/3-inch, interline transfer, progressive-capable)

#### Lens

LEICA DICOMAR Optical image stabilizer lens,

Motorized/Manual selectable 13 x zoom,

F1.6 to F3.0 (f=3.9 mm to 51 mm)

(35 mm equivalent: 28 mm to 368 mm)

### Color separation optical system

Prism system

### ND filter

1/4, 1/16, 1/64

### Gain settings

0/+3/+6/+9/+12/+18 dB (60i/60P mode)

• 1/15 (0 dB) (in slow shutter mode)

0/+3/+6/+9/+12 dB (30P/24P mode)

• 1/15 (0 dB) (in slow shutter mode)

### Shutter speed settings

Preset

60i/60P mode:

1/60(OFF), 1/100, 1/120, 1/250, 1/500,

1/1000, 1/2000 seconds

30P mode:

1/30, 1/50 (OFF), 1/60, 1/120, 1/250,

1/500, 1/1000 seconds

24P mode:

1/24, 1/50 (OFF), 1/60, 1/120, 1/250,

1/500, 1/1000 seconds

Synchronous scan settings

60i/60P mode: 1/60.0 seconds to 1/249.8

seconds

30P mode: 1/30.0 seconds to 1/249.8 seconds

24P mode: 1/24.0 seconds to 1/249.8 seconds

### Slow shutter speed settings

60i/60P mode: 1/15, 1/30 seconds

30P mode: 1/15 seconds

### Minimum subject luminance

3 lx (F1.6, gain +12 dB, with a shutter speed of 1/24)

### Digital zoom

2 x /5 x /10 x (Assigned to the USER button, for switching zoom levels)

Operation with the 1080/60i and 720/60P formats only

### Lens hood

Large-sized lens hood with wide angle of view

### Filter diameter

72 mm

### [Recording/playback]

#### Recording Format

AVCHD specifications

#### Compression method

MPEG-4 AVC/H.264

#### Recording media

SD Memory Card:

512 MB, 1 GB, 2 GB

(FAT12 and FAT16 format)

SDHC Memory Card:

4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB

(FAT32 format)

SD/SDHC Memory Cards with a memory size

from 8 MB to 32 GB can be used to record

and read scene files and user files and to read

metadata.

#### Recording format (Recording mode: resolution)

PH mode:

1080/60i

1080/30P (over 60i)

1080/24P (Native recording)

720/60P

720/30P (over 60P)

720/24P (Native recording)

HA mode:

1080/60i

HG mode:

1080/60i

HE mode:

1080/60i

#### Transmission rate

PH mode: Approx. 21 Mbps (VBR)

HA mode: Approx. 17 Mbps (VBR)

HG mode: Approx. 13 Mbps (VBR)

HE mode: Approx. 6 Mbps (VBR)

**[Video System]****Video signals**

1080/60i, 720/60p

**Video output**

HDMI output

HDMI × 1

1080/60i, 720/60p, 480/60p

(Not compatible with VIERA Link)

Analog component output

Mini D terminal × 1

Y: 1.0 V [p-p], 75 Ω

PB/PR: 0.7 V [p-p], 75 Ω

Composite output

Pin jack × 1, 1.0 V [p-p], 75 Ω

**[Audio System]****Compression method**

Recording/playback: Dolby Digital (Dolby AC3)/2 ch

**Sampling frequency**

48 kHz

**Encoding**

16 bit

**Compressed bit-rate**

PH mode: 2 CH 384 kbps

HA/HG/HE mode: 2 CH 256 kbps

**[Audio IN/OUT]****XLR input**

XLR (3 pins) × 2 (INPUT1, INPUT2),

LINE/MIC selectable, High impedance

LINE: 0 dBu

MIC: -50 dBu/-60 dBu (selectable in menu)

**AUDIO output**

Pin jack × 2 (CH1, CH2)

Output: 316 mV, 600 Ω

**Internal microphone**

Stereo microphone

**HDMI**

2 ch (Linear PCM) · 5.1 ch (AC3)

**Headphone**

Stereo mini jack (3.5 mm diameter) × 1

**Internal speaker**

20 mm (round) × 1

**[Other inputs/outputs]****USB**

Type mini B connector

(compliant with USB ver. 2.0)

**CAM REMOTE**

Super mini jack (2.5 mm diameter) (ZOOM S/S)

Mini jack (3.5 mm diameter) (FOCUS, IRIS)

**TC PRESET IN/OUT (Also used for VIDEO OUT)**

IN: 1.0 V to 4.0 V [p-p] 10 kΩ


OUT: 2.0 V ± 0.5 V [p-p] Low impedance

**[Monitor]****LCD monitor**

3.5-inch LCD color monitor (210,000 pixels)

**Viewfinder**

0.44-inch LCD color viewfinder (235,000 pixels)

**[AC adapter]**Power Source: 110 V - 240 V AC, 50 Hz/60 Hz  
22 WPower Output: 7.3 V DC, 1.75 A  
(Camera-recorder)  
8.4 V DC, 1.3 A (Charge) indicates safety information.**Weight**

140 g (0.31 lb)

**Dimensions (W x H x D)**

103 mm × 36 mm × 62 mm

(4-1/16 inches × 1-13/32 inches × 2-7/16 inches)

Weight and dimensions are approximate.  
Specifications are subject to change without notice.

# Specifications


## [General]

### Supply voltage:

DC 7.2 V (when the battery is used)/

7.3 V (when the AC adapter is used)

**Power consumption:** Recording: 9.8 W

 indicates safety information.

### Ambient operating temperature

0 °C to 40 °C

### Ambient operating humidity

10% to 80% (no condensation)

### Weight

Approx. 1.7 kg

(excluding battery and accessories)

### Dimensions (W x H x D)

154 mm x 164 mm x 397 mm

(excluding the projection part)

## [Camera]

### Pickup devices

CCD image sensor (× 3)

(1/3-inch, interline transfer, progressive-capable)

### Lens

LEICA DICOMAR Optical image stabilizer lens,

Motorized/Manual selectable 13 x zoom,

F1.6 to F3.0 (f=3.9 mm to 51 mm)

(35 mm equivalent: 28 mm to 368 mm)

### Color separation optical system

Prism system

### ND filter

1/4, 1/16, 1/64

### Gain settings

When SYSTEM FREQ is set to 50 Hz

0/+3/+6/+9/+12/+18 dB (50i/50P mode)

• 1/12 (0 dB) (in slow shutter mode)

0/+3/+6/+9/+12 dB (25P mode)

• 1/12 (0 dB) (in slow shutter mode)

When SYSTEM FREQ is set to 59.9 Hz

0/+3/+6/+9/+12/+18 dB (60i/60P mode)

• 1/15 (0 dB) (in slow shutter mode)

0/+3/+6/+9/+12 dB (30P/24P mode)

• 1/15 (0 dB) (in slow shutter mode)

## Shutter speed settings

### • Preset

When SYSTEM FREQ is set to 50 Hz

50i/50P mode:

1/50 (OFF), 1/60, 1/120, 1/250, 1/500,  
1/1000, 1/2000 seconds

25P mode:

1/25, 1/50 (OFF), 1/60, 1/120, 1/250,  
1/500, 1/1000 seconds

When SYSTEM FREQ is set to 59.9 Hz

60i/60P mode:

1/60 (OFF), 1/100, 1/120, 1/250, 1/500,  
1/1000, 1/2000 seconds

30P mode:

1/30, 1/50 (OFF), 1/60, 1/120, 1/250,  
1/500, 1/1000 seconds

24P mode:

1/24, 1/50 (OFF), 1/60, 1/120, 1/250,  
1/500, 1/1000 seconds

### • Synchronous scan settings

When SYSTEM FREQ is set to 50 Hz

50i/50P mode: 1/50.0 seconds to 1/248.9  
seconds

25P mode: 1/25.0 seconds to 1/248.9  
seconds

When SYSTEM FREQ is set to 59.9 Hz

60i/60P mode: 1/60.0 seconds to 1/249.8  
seconds

30P mode: 1/30.0 seconds to 1/249.8 seconds

24P mode: 1/24.0 seconds to 1/249.8 seconds

### • Slow shutter speed settings

When SYSTEM FREQ is set to 50 Hz

50i/50P mode: 1/12, 1/25 seconds

25P mode: 1/12 seconds

When SYSTEM FREQ is set to 59.9 Hz

60i/60P mode: 1/15, 1/30 seconds

30P mode: 1/15 seconds

## Minimum subject luminance

When SYSTEM FREQ is set to 50 Hz

3 lx (F1.6, gain +12 dB, with a shutter speed of 1/25)

When SYSTEM FREQ is set to 59.9 Hz

3 lx (F1.6, gain +12 dB, with a shutter speed of 1/24)

## Digital zoom

2 x /5 x /10 x (Assigned to the USER button, for switching zoom levels)

Operation with the 1080/50i or 720/50P formats only (When SYSTEM FREQ is set to 50 Hz)

Operation with the 1080/60i and 720/60P formats only (When SYSTEM FREQ is set to 59.9 Hz)

## Lens hood

Large-sized lens hood with wide angle of view

## Filter diameter

72 mm

## [Recording/playback]

### Recording Format

AVCHD specifications

### Compression method

MPEG-4 AVC/H.264

### Recording media

SD Memory Card:

512 MB, 1 GB, 2 GB  
(FAT12 and FAT16 format)

SDHC Memory Card:

4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB  
(FAT32 format)

SD/SDHC Memory Cards with a memory size from 8 MB to 32 GB can be used to record and read scene files and user files and to read metadata.

### Recording format (Recording mode: resolution)

When SYSTEM FREQ is set to 50 Hz

PH mode:

1080/50i  
1080/25P (over 50i)  
720/50P  
720/25P (over 50P)

HA mode:

1080/50i

HG mode:

1080/50i

HE mode:

1080/50i

When SYSTEM FREQ is set to 59.9 Hz

PH mode:

1080/60i  
1080/30P (over 60i)  
1080/24P (Native recording)  
720/60P  
720/30P (over 60P)  
720/24P (Native recording)

HA mode:

1080/60i

HG mode:

1080/60i

HE mode:

1080/60i

### Transmission rate

PH mode: Approx. 21 Mbps (VBR)

HA mode: Approx. 17 Mbps (VBR)

HG mode: Approx. 13 Mbps (VBR)

HE mode: Approx. 6 Mbps (VBR)

## [Video System]

### Video signals

When SYSTEM FREQ is set to 50 Hz

1080/50i, 720/50p

When SYSTEM FREQ is set to 59.9 Hz

1080/60i, 720/60p

### Video output

HDMI output

HDMI × 1

When SYSTEM FREQ is set to 50 Hz

1080/50i, 720/50p, 576/50p

(Not compatible with VIERA Link)

When SYSTEM FREQ is set to 59.9 Hz

1080/60i, 720/60p, 480/60p

(Not compatible with VIERA Link)

Analog component output

Mini D terminal × 1

Y: 1.0 V [p-p], 75 Ω

PB/PR: 0.7 V [p-p], 75 Ω

Composite output

Pin jack × 1, 1.0 V [p-p], 75 Ω

## [Audio System]

### Compression method

Recording/playback: Dolby Digital (Dolby AC3)/2 ch

### Sampling frequency

48 kHz

### Encoding

16 bit

### Compressed bit-rate

PH mode: 2 CH 384 kbps

HA/HG/HE mode: 2 CH 256 kbps

## [Audio IN/OUT]

### XLR input

XLR (3 pins) × 2 (INPUT1, INPUT2),  
LINE/MIC selectable, High impedance

LINE: 0 dBu

MIC: -50 dBu/-60 dBu (selectable in menu)

### AUDIO output

Pin jack × 2 (CH1, CH2)

Output: 316 mV, 600 Ω

### Internal microphone

Stereo microphone

### HDMI

2 ch (Linear PCM) · 5.1 ch (AC3)

### Headphone

Stereo mini jack (3.5 mm diameter) × 1

### Internal speaker

20 mm (round) × 1

(Continued on the next page)

## Specifications (continued)

### [Other inputs/outputs]

#### USB

Type mini B connector  
(compliant with USB ver. 2.0)

#### CAM REMOTE

Super mini jack (2.5 mm diameter) (ZOOM S/S)  
Mini jack (3.5 mm diameter) (FOCUS, IRIS)

#### TC PRESET IN/OUT (Also used for VIDEO OUT)

IN: 1.0 V to 4.0 V [p-p] 10 k $\Omega$   
OUT: 2.0 V  $\pm$  0.5 V [p-p] Low impedance

### [Monitor]

#### LCD monitor


3.5-inch LCD color monitor (210,000 pixels)

#### Viewfinder

0.44-inch LCD color viewfinder (235,000 pixels)

### [AC adapter]

Power Source:	110 V - 240 V AC, 50 Hz/60 Hz 22 W
Power Output:	7.3 V DC, 1.75 A (Camera-recorder) 8.4 V DC, 1.3 A (Charge)

 indicates safety information.

### Weight

140 g

### Dimensions (W x H x D)

103 mm  $\times$  36 mm  $\times$  62 mm

Inrush current, measured according to European standard EN55103-1: 5 A

Weight and dimensions are approximate.  
Specifications are subject to change without notice.

# AG-HMC152EN/153MC

## Specifications

---


### [General]

#### Supply voltage:

DC 7.2 V (when the battery is used)/

7.3 V (when the AC adapter is used)

**Power consumption:** Recording: 9.8 W

 indicates safety information.

#### Ambient operating temperature

0 °C to 40 °C

#### Ambient operating humidity

10% to 80% (no condensation)

#### Weight

Approx. 1.7 kg

(excluding battery and accessories)

#### Dimensions (W x H x D)

154 mm x 164 mm x 397 mm

(excluding the projection part)

### [Camera]

#### Pickup devices

CCD image sensor (x 3)

(1/3-inch, interline transfer, progressive-capable)

#### Lens

LEICA DICOMAR Optical image stabilizer lens,

Motorized/Manual selectable 13 x zoom,

F1.6 to F3.0 (f=3.9 mm to 51 mm)

(35 mm equivalent: 28 mm to 368 mm)

#### Color separation optical system

Prism system

#### ND filter

1/4, 1/16, 1/64

#### Gain settings

0/+3/+6/+9/+12/+18 dB (50i/50P mode)

• 1/12 (0 dB) (in slow shutter mode)

0/+3/+6/+9/+12 dB (25P mode)

• 1/12 (0 dB) (in slow shutter mode)

#### Shutter speed settings

##### Preset

50i/50P mode:

1/50 (OFF), 1/60, 1/120, 1/250, 1/500,

1/1000, 1/2000 seconds

25P mode:

1/25, 1/50 (OFF), 1/60, 1/120, 1/250, 1/500,

1/1000 seconds

##### Synchronous scan settings

50i/50P mode: 1/50.0 seconds to 1/248.9 seconds

25P mode: 1/25.0 seconds to 1/248.9 seconds

##### Slow shutter speed settings

50i/50P mode: 1/12, 1/25 seconds

25P mode: 1/12 seconds

#### Minimum subject luminance

3 lx (F1.6, gain +12 dB, with a shutter speed of 1/25)

#### Digital zoom

2 x /5 x /10 x (Assigned to the USER button, for switching zoom levels)

Operation with the 1080/50i or 720/50P formats only

#### Lens hood

Large-sized lens hood with wide angle of view

#### Filter diameter

72 mm

### [Recording/playback]

#### Recording Format

AVCHD specifications

#### Compression method

MPEG-4 AVC/H.264

#### Recording media

SD Memory Card:

512 MB, 1 GB, 2 GB

(FAT12 and FAT16 format)

SDHC Memory Card:

4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB

(FAT32 format)

SD/SDHC Memory Cards with a memory size from 8 MB to 32 GB can be used to record and read scene files and user files and to read metadata.

#### Recording format (Recording mode: resolution)

PH mode:

1080/50i

1080/25P (over 50i)

720/50P

720/25P (over 50P)

HA mode:

1080/50i

HG mode:

1080/50i

HE mode:

1080/50i

#### Transmission rate

PH mode: Approx. 21 Mbps (VBR)

HA mode: Approx. 17 Mbps (VBR)

HG mode: Approx. 13 Mbps (VBR)

HE mode: Approx. 6 Mbps (VBR)

## [Video System]

### Video signals

1080/50i, 720/50p

### Video output

HDMI output

HDMI × 1

1080/50i, 720/50p, 576/50p

(Not compatible with VIERA Link)

Analog component output

Mini D terminal × 1

Y: 1.0 V [p-p], 75 Ω

P<sub>B</sub>/P<sub>R</sub>: 0.7 V [p-p], 75 Ω

Composite output

Pin jack × 1, 1.0 V [p-p], 75 Ω

## [Audio System]

### Compression method

Recording/playback: Dolby Digital (Dolby AC3)/2 ch

### Sampling frequency

48 kHz

### Encoding

16 bit

### Compressed bit-rate

PH mode: 2 CH 384 kbps

HA/HG/HE mode: 2 CH 256 kbps

## [Audio IN/OUT]

### XLR input

XLR (3 pins) × 2 (INPUT1, INPUT2),

LINE/MIC selectable, High impedance

LINE: 0 dBu

MIC: -50 dBu/-60 dBu (selectable in menu)

### AUDIO output

Pin jack × 2 (CH1, CH2)

Output: 316 mV, 600 Ω

### Internal microphone

Stereo microphone

### HDMI

2 ch (Linear PCM) · 5.1 ch (AC3)

### Headphone

Stereo mini jack (3.5 mm diameter) × 1

### Internal speaker

20 mm (round) × 1

## [Other inputs/outputs]

### USB

Type mini B connector

(compliant with USB ver. 2.0)

### CAM REMOTE

Super mini jack (2.5 mm diameter) (ZOOM S/S)

Mini jack (3.5 mm diameter) (FOCUS, IRIS)

### TC PRESET IN/OUT (Also used for VIDEO OUT)

IN: 1.0 V to 4.0 V [p-p] 10 kΩ

OUT: 2.0 V ± 0.5 V [p-p] Low impedance

## [Monitor]

### LCD monitor

3.5-inch LCD color monitor (210,000 pixels)

### Viewfinder

0.44-inch LCD color viewfinder (235,000 pixels)

## [AC adapter]

Power Source: 110 V - 240 V AC, 50 Hz/60 Hz  
22 W

Power Output: 7.3 V DC, 1.75 A  
(Camera-recorder)  
8.4 V DC, 1.3 A (Charge)

 indicates safety information.

## Weight

140 g

## Dimensions (W x H x D)

103 mm × 36 mm × 62 mm

Weight and dimensions are approximate.  
Specifications are subject to change without notice.



# SAFETY PRECAUTIONS

## GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts, which have been over-heated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

## LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. The resistance value must be more than 5MΩ.

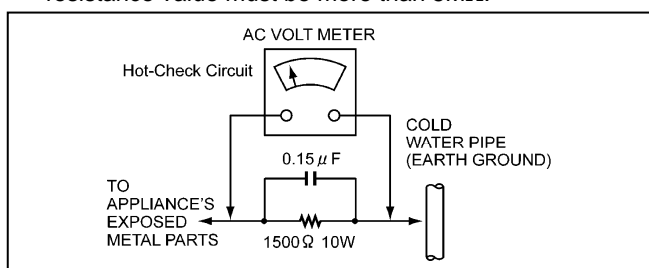


Figure1

## LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5KΩ, 10W resistor, in parallel with a 0.15μ F capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.15 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 0.1 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

## ABOUT LEAD FREE SOLDER (PbF)

### Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

### Caution:

1. Pb free solder has a higher melting point than standard solder; Typically the melting point is 50–70°F (30–40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700±20°F (370±10°C).
2. Pb free solder will tend to splash when heated too high (about 1100°F/600°C).

## ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist trap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as “anti-static” can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (most replacement ES devices are package with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed. CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

## X-RADIATION

### WARNING

1. The potential source of X-radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing X-Radiation.

**Note:** It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV, ±0.15kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

# AG-HMC150P

## Read this first!

 indicates safety information.



**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

### WARNING:

- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.
- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, KEEP THIS EQUIPMENT AWAY FROM ALL LIQUIDS. USE AND STORE ONLY IN LOCATIONS WHICH ARE NOT EXPOSED TO THE RISK OF DRIPPING OR SPLASHING LIQUIDS, AND DO NOT PLACE ANY LIQUID CONTAINERS ON TOP OF THE EQUIPMENT.

### WARNING:

Always keep memory cards or accessories (coin battery, microphone holder screws, microphone holder adapter, ferrite cores, binders, INPUT terminal covers) out of the reach of babies and small children.

### CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

### CAUTION:

Do not jar, swing, or shake the unit by its handle while the conversion lens or another accessory is attached. Due to the added weight of the conversion lens, any strong jolt to the handle may damage the unit or result in personal injury.

### CAUTION:

THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE. THE AC RECEPTACLE (MAINS SOCKET OUTLET) SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE. TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER CORD PLUG FROM THE AC RECEPTACLE.

### CAUTION:

Danger of explosion or fire if battery is mistreated.

#### For Battery Pack

- Replace only with same or specified type.
- Do not disassemble or dispose of in fire.
- Do not store in temperatures over 60°C (140°F).
- Do not leave the battery in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.
- Use specified charger.

#### For Battery of Remote Controller

- Replace battery with part No. CR2025 only.
- Do not recharge the battery.
- Do not disassemble or dispose of in fire.
- Do not store in temperatures over 60°C (140°F).

#### Camera-Recorder

The rating plate is on the underside of the viewfinder.

#### AC Adapter

The rating plate is on the underside of the AC Adapter. Disconnect the AC mains plug from the AC mains socket when not in use.

### CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

### CAUTION:

Do not lift the unit by its handle while the tripod is attached. When the tripod is attached, its weight will also affect the unit's handle, possibly causing the handle to break and hurting the user. To carry the unit while the tripod is attached, take hold of the tripod.

### CAUTION:

EXCESSIVE SOUND PRESSURE FROM EARPHONES AND HEADPHONES CAN CAUSE HEARING LOSS.

### CAUTION:

Do not leave the unit in direct contact with the skin for long periods of time when in use. Low temperature burn injuries may be suffered if the high temperature parts of this unit are in direct contact with the skin for long periods of time. When using the equipment for long periods of time, make use of the tripod.

## FCC NOTICE (USA)

### Declaration of Conformity

Model Number: AG-HMC150P

Trade Name: PANASONIC

Responsible Party: Panasonic Corporation of North America One Panasonic Way, Secaucus, NJ 07094

Support contact: Panasonic Broadcast & Television Systems Company 1-800-524-1448

This device complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

To assure continued compliance, follow the attached installation instructions and do not make any unauthorized modifications.

### CAUTION:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the booklet "Something About Interference" available from FCC local regional offices helpful.

### FCC Warning:

To assure continued FCC emission limit compliance, follow the attached installation instructions and the user must use only shielded interface cables when connecting to host computer or peripheral devices. Also any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

## NOTIFICATION (Canada)

This class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## IMPORTANT

"Unauthorized recording of copyrighted television programs, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."



A lithium ion/polymer battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

## For USA-California Only

This product contains a CR Coin Cell Lithium Battery which contains Perchlorate Material – special handling may apply.

See [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate).



**ATTENTION**  
**RISQUE DE CHOC**  
**ÉLECTRIQUE**  
**NE PAS OUVRIR**



**ATTENTION:**  
AFIN DE PRÉVENIR LE RISQUE DE CHOC  
ÉLECTRIQUES, NE DÉVISSEZ PAS LE COUVERCLE.  
AUCUNE PIÈCE N'EST RÉPARABLE PAR  
L'UTILISATEUR À L'INTÉRIEUR DU COFFRET.  
TOUTE RÉPARATION DEVRAIT ÊTRE CONFIEE À UN  
PERSONNEL QUALIFIÉ.



Le symbole de l'éclair dans un triangle  
équilatéral indique la présence d'une tension  
suffisamment élevée pour engendrer un  
risque de chocs électriques.



Le point d'exclamation dans un triangle  
équilatéral indique que le manuel d'utilisation  
inclus avec l'appareil contient d'importantes  
recommandations quant au fonctionnement  
et à l'entretien de ce dernier.

### AVERTISSEMENT:

- POUR RÉDUIRE LES RISQUES  
D'INCENDIE OU DE CHOC ÉLECTRIQUE,  
ÉVITEZ D'EXPOSER CET APPAREIL À LA  
PLUIE OU À L'HUMIDITÉ.
- POUR RÉDUIRE TOUT RISQUE DE FEU  
OU DE CHOC ÉLECTRIQUE, ÉLOIGNER  
L'APPAREIL DES LIQUIDES - UTILISER ET  
RANGER UNIQUEMENT DANS UN ENDROIT  
NE RISQUANT PAS DE RECEVOIR  
DES GOUTTES OU D'ÊTRE ASPERGÉ  
DE LIQUIDES, ET NE PAS METTRE DE  
RÉCIPIENT RENFERMANT DES LIQUIDES  
SUR LE DESSUS DE L'APPAREIL.

### AVERTISSEMENT:

Rangiez toujours les cartes mémoire et accessoires  
(pile-bouton, vis du support de microphone,  
adaptateur de support de microphone, noyaux de  
ferrite, attaches et caches de borne INPUT) hors de  
portée des bébés et des jeunes enfants.

### ATTENTION:

POUR ÉVITER TOUT RISQUE D'INCENDIE, DE CHOC  
ÉLECTRIQUES OU D'INTERFÉRENCES, N'UTILISER  
QUE LES ACCESSOIRES RECOMMANDÉS.

### ATTENTION:

Ne faites pas trembler ou osciller l'appareil et ne  
le secouez pas par la poignée lorsque l'objectif de  
conversion ou un autre accessoire est fixé.  
À cause du poids de l'objectif de conversion, une rude  
secousse à la poignée risque d'endommager l'appareil  
ou de provoquer des blessures personnelles.

### ATTENTION:

LA FICHE DU CORDON D'ALIMENTATION DOIT  
ÊTRE FACILEMENT ACCESSIBLE.  
LA PRISE DE COURANT (PRISE SECTEUR) DOIT  
ÊTRE INSTALLÉE À PROXIMITÉ DE L'APPAREIL ET  
FACILEMENT ACCESSIBLE.  
POUR DÉCONNECTER COMPLÈTEMENT CET APPAREIL  
DU SECTEUR, DÉBRANCHEZ LA FICHE DU CORDON  
D'ALIMENTATION DE LA PRISE DE COURANT.

### PRÉCAUTION:

Il y a risque d'explosion si la batterie n'est pas  
manipulée correctement.

#### Pour le bloc-piles

- Remplacer exclusivement par une batterie  
du même type ou du type spécifié.
- Ne pas démonter ni jeter au feu.
- Ne pas ranger à des températures  
supérieures à 60°C (140°F).
- Ne laissez pas de façon prolongée la batterie  
exposée au rayonnement direct du soleil dans  
une voiture aux portières et aux fenêtres fermées.
- Utilisez le chargeur spécifié.

#### Pour la pile de la télécommande

- Remplacer la pile exclusivement par une pile  
No. CR2025.
- Ne pas recharger la pile.
- Ne pas démonter ni jeter au feu.
- Ne pas ranger à des températures  
supérieures à 60°C (140°F).

#### Camescope

La plaque signalétique se trouve sur le fond du viseur.

#### Adaptateur secteur

La plaque signalétique se trouve sur le fond  
de l'adaptateur secteur.  
Débrancher la fiche secteur de la prise  
lorsqu'on ne se sert pas de l'appareil.

### ATTENTION:

Pour maintenir une bonne ventilation, ne pas  
installer ni placer l'appareil dans une étagère, un  
meuble encastré ni aucun endroit confiné. Pour  
éviter tout risque de choc électrique ou de feu dû  
à une surchauffe, vérifier qu'aucun rideau ni aucun  
autre matériau ne fait obstacle à la ventilation.

### ATTENTION:

Une pression sonore excessive des écouteurs et des  
casques d'écoute peut entraîner des troubles auditifs.

### ATTENTION:

Ne laissez pas l'appareil au contact direct de la  
peau de façon prolongée lors de l'utilisation.  
Des brûlures dues aux basses températures  
pourraient résulter si les parties de cet appareil  
sont en contact direct avec la peau de façon  
prolongée.  
Quand vous utilisez l'appareil de façon  
prolongée, utilisez le trépied.

### NOTIFICATION (Canada)

Cet appareil numérique de la classe B est  
conforme à la norme NMB-003 du Canada.

### **PRÉCAUTION:**

Ne pas soulever l'appareil par sa poignée alors que le trépied est fixé. Comme le poids du trépied s'exerce aussi sur la poignée de l'appareil lorsqu'il est fixé, vous risqueriez de casser la poignée et de vous blesser. Pour transporter l'appareil lorsque le trépied est fixé, tenir le trépied.

### **Mise en garde:**

"L'enregistrement non autorisé d'émissions de télévision, films, rubans magnétoscopiques ou autres, protégés par des droits d'auteur, peut enfreindre les droits de propriété et aller à l'encontre des dispositions de la loi sur les droits d'auteur".



L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion/lithium-polymère.

Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

## Caution for AC Mains Lead

**FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.**

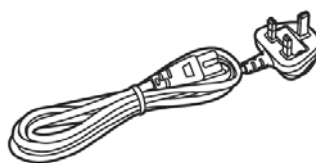
This product is equipped with 2 types of AC mains cable. One is for continental Europe, etc. and the other one is only for U.K.

Appropriate mains cable must be used in each local area, since the other type of mains cable is not suitable.

**FOR CONTINENTAL EUROPE, ETC.**  
Not to be used in the U.K.



**FOR U.K. ONLY**





### **FOR U.K. ONLY**

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

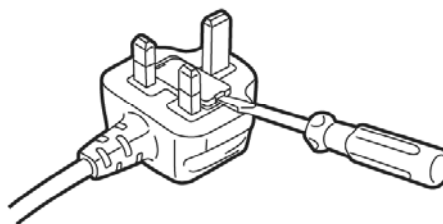
If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

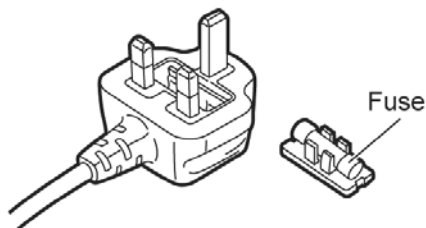
A replacement fuse cover can be purchased from your local Panasonic Dealer.

### **How to replace the fuse**

1. Open the fuse compartment with a screwdriver.



2. Replace the fuse



## ■ DO NOT REMOVE PANEL COVERS BY UNSCREWING THEM.

To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

### **WARNING:**

- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.
- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, KEEP THIS EQUIPMENT AWAY FROM ALL LIQUIDS. USE AND STORE ONLY IN LOCATIONS WHICH ARE NOT EXPOSED TO THE RISK OF DRIPPING OR SPLASHING LIQUIDS, AND DO NOT PLACE ANY LIQUID CONTAINERS ON TOP OF THE EQUIPMENT.

### **WARNING:**

Always keep memory cards or accessories (coin battery, microphone holder screws, microphone holder adapter, ferrite cores, binders, INPUT terminal covers) out of the reach of babies and small children.

### **CAUTION:**

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

### **CAUTION:**

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

### **CAUTION:**

Do not lift the unit by its handle while the tripod is attached. When the tripod is attached, its weight will also affect the unit's handle, possibly causing the handle to break and hurting the user. To carry the unit while the tripod is attached, take hold of the tripod.

### **CAUTION:**

Danger of explosion or fire if battery is mistreated.

#### **For Battery Pack**

- Replace only with same or specified type.
- Do not disassemble or dispose of in fire.
- Do not store in temperatures over 60°C (140°F).
- Do not leave the battery in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.
- Use specified charger.

#### **For Battery of Remote Controller**

- Replace battery with part No. CR2025 only.
- Do not recharge the battery.
- Do not disassemble or dispose of in fire.
- Do not store in temperatures over 60°C (140°F).

### **Camera-Recorder**

The rating plate is on the underside of the viewfinder.

### **AC Adapter**

The rating plate is on the underside of the AC Adapter.

Disconnect the AC mains plug from the AC mains socket when not in use.

### **CAUTION:**

THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE. THE AC RECEPTACLE (MAINS SOCKET OUTLET) SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.

TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER CORD PLUG FROM THE AC RECEPTACLE.

### **CAUTION:**

Do not jar, swing, or shake the unit by its handle while the conversion lens or another accessory is attached.

Due to the added weight of the conversion lens, any strong jolt to the handle may damage the unit or result in personal injury.

### **CAUTION:**

EXCESSIVE SOUND PRESSURE FROM EARPHONES AND HEADPHONES CAN CAUSE HEARING LOSS.

### **CAUTION:**

Do not leave the unit in direct contact with the skin for long periods of time when in use.

Low temperature burn injuries may be suffered if the high temperature parts of this unit are in direct contact with the skin for long periods of time.

When using the equipment for long periods of time, make use of the tripod.

## **Operating precaution**

Operation near any appliance which generates strong magnetic fields may give rise to noise in the video and audio signals. If this should be the case, deal with the situation by, for instance, moving the source of the magnetic fields away from the unit before operation.

## **IMPORTANT**

"Unauthorized recording of copyrighted television programs, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

### **Recommendation for Use of Genuine Panasonic Battery (Rechargeable Battery)**

Thank you for using a Panasonic product.

It has been found that counterfeit battery packs which look very similar to the genuine product are made available to purchase in some markets. Some of these battery packs are not adequately protected with internal protection to meet the requirements of appropriate safety standards. There is a possibility that these battery packs may lead to fire or explosion. Please be advised that we are not liable for any accident or failure occurring as a result of use of a counterfeit battery pack. To ensure that safe products are used we would recommend that a genuine Panasonic battery pack is used.

- Be aware that many batteries sold at extremely cheap prices or in situations where it is difficult to verify the actual products before purchase have proven to be counterfeit.

#### **■ Batteries that may be used with this product**

**(Correct as of August 2008)**

Panasonic VW-VBG260 and VW-VBG6 batteries may be used with this product.

The VW-VBG260 and VW-VBG6 batteries contain a function to enable verification as to whether they may be safely used with this product.

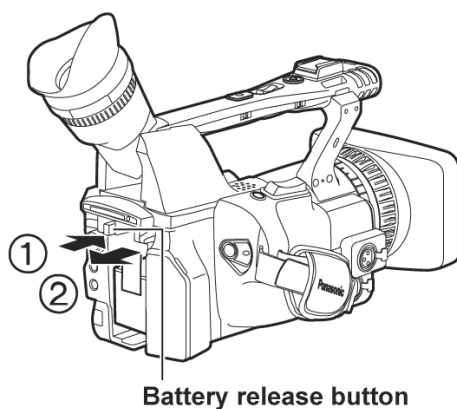




## To remove the battery

### Main Power Battery (Refer to page 20 for the detail.)

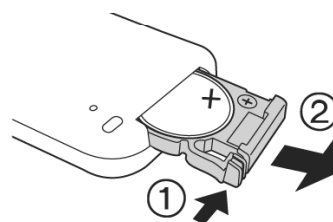
Press the battery release button.



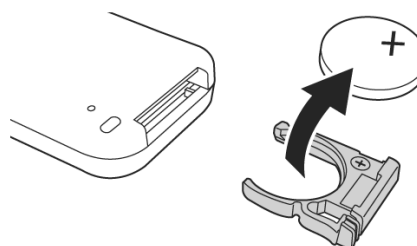
**\*NOTE:**  
The page number shown above shows  
the page of the operation instructions.

### Remote Control Battery

- 1) Push the catch in the direction shown by arrow ① to remove the holder.



- 2) Remove the button-type battery from the battery holder.



**Panasonic<sup>®</sup>**